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FERTILITY AND CORESIDENT FAMILY STRUCTURE
AN URBAN CASE STUDY IN MALAYSIA

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CHAPTER I

INTRODUCTION

Much of the demographic research tends to focus on the study of the individuals and large areal units to the extent that the study of groups is comparatively neglected. As a result, the demography of households and families is one of the least codified subfields of demography (U.N. 1973). In recent years, however, considerable interest has been focussed on this neglected area of research (Sweet, 1977; Burch, 1979). In Malaysia, there is almost negligible effort in this area. This is rather unfortunate since the type, size and distribution of Malaysian families and households have important relationships with many aspects of socioeconomic planning and policies. In particular, the measurement of poverty and the assessment of housing needs are intimately connected with the household and family composition and their temporal changes. An initial effort to look at the relationship between household poverty and family structure in Malaysia has been undertaken (Chee, 1981).

In this report, the relationship between coresidential family structure and certain measures of fertility is investigated. It is an initial effort to assess the empirical support for the thesis that family structure and family system have direct relationships with fertility behaviour and fertility norm. The study area is the capital city of Kuala Lumpur and selected surrounding urban areas, which form the largest metropolitan areas in Malaysia.

A. Objectives of the Study

In this report, the following analyses are attempted in the context of a posited causal model for the determination of fertility measures and of family structural type. In particular, we seek to

establish the correlates of family types with fertility measures and to provide substantive explanations. Since age at marriage is an important intervening variable in the causal scheme, the determination of the age of marriage is also undertaken in order to provide further clarification to the above relationships.

B. Data Source and Sample Design

The data come from the socioeconomic survey of the Federal Territory of Kuala Lumpur which was conducted in 1979 as part of a sponsored project by the Centre for Policy Research, Universiti Sains Malaysia for a Master Plan for that city. The survey was carried out by the Master Plan team with technical assistance provided by the Centre for Policy Research and the Department of Statistics. The survey covered the metropolitan area of the Federal Territory of Kuala Lumpur (94 square miles), the adjacent municipality of Petaling Jaya (17 square miles) and the surrounding urban conurbations (35 square miles). These areas are indicated in Figure 1.1.

The sample design is a two-stage random selection using systematic sampling. The first stage is an areal sampling in which 50 percent of the subareas (called the 'sectors') were selected from the study area. The sectors have an average number of about 100 households. In the second stage, a 20 percent subsample was drawn from households listed in the selected sectors, in which households were selected using systematic sampling with a random start for each sector.

Altogether, about 18,400 households were selected for interview and the response rate was about 85 percent. In this study, the unit of analysis is the currently married couples (called the 'families') within these selected households, in which the age of the wives are between 15 and 45 years. Furthermore, only the three major ethnic groups, the Chinese, Malay and Indians, are utilized in the analysis. Consequently, the effective sample

Figure 1.1 : The Study Areas of Kuala Lumpur, Petaling Jaya and Surrounding Connurbations

size for this study is 12,015 coresident couples or families.

Literature Review

There have not been many empirical investigations and theoretical discussions on the relationship between fertility and family structure in recent years. The major theoretical exposition of the relationships are those of Lorimer (1954), Davis (1955), and Davis and Blake (1956). The basic propositions are that corporate kinship systems, such as clans or organized linkages, tend to provide the motivation and support for early and near universal marriage and hence to high marital fertility. Furthermore, extended family systems also tend to provide such motivation and support in contrast to the independent conjugal family system (or even the stem family system) which tend to lead to lower fertility.

The above propositions are based on the following cultural and structural explanations. First, religious and cultural norms and values regarding family strength and continuity get internalized into the personality. This might tend to motivate marriage and reproduction independent of the immediate family context (Lorimer, 1954). Second, matrilocality or patrilocality tends to motivate parents to get their children established in marriage as soon as possible so as to establish greater linkages to other family lines and to achieve greater family status (Davis, 1955).

The above classical theses have been criticised on many grounds (Stycos, 1958). First, extended family patterns are not as prevalent in non-industrialized societies as normally assumed. Second, the sharp decline in infant and child mortality in non-industrialized societies in recent decades must have significant impact on fertility as well as family structure. Third, the ideal family size among the women of these societies is not as high as

one would have expected. Freedman (1961) and Goode (1963) have questioned whether there is any inherent relationship between fertility and family structure in the context of the rapid pace of modernization among the non-industrialized societies.

Excellent discussions of the theoretical and methodological issues are provided by Burch and Gendell (1970) and also by Back and Hass (1973). From the above sources, it is demonstrated that there are contradictory empirical evidences pertaining to hypotheses linking family structure and fertility. For example, Nag (1967) and Pakrasi and Malaker (1967) found that joint or complex familial households are more likely to have smaller cumulative fertility than nuclear or 'simple' familial households. This is true even when controls are made for social class and duration of marriage. On the other hand, studies in Taiwan indicated that nuclear family (rather than stem or joint family) is linked to lower cumulative fertility, smaller desired family size and use of fertility control. The differences, however, are not large when they are age-standardized (Liu, 1967).

Some explanations have been offered to clarify the above empirical results. First, the definition of extended or joint family is not uniformly employed in the studies. The distinction between collateral and generational extension is not being considered in all the studies. Second, it is possible to posit contrary causal forces in which, under certain circumstances, the extended family may want its members to have fewer children (Stycos, 1958). For example, married couples who are not heads of households may be motivated to restrict fertility. Furthermore, women in joint households may have lower frequency in intercourse because of lack of privacy and the pressure by other kin to observe cultural taboos (Nag, 1967).

The relationship between fertility and family structure may also be obsured by family life cycle events and the 'availability' of kin due to mortality or migration. Palmore et al (1970) have indicated the importance of 'availability' in a study of Malaysian families. Kurt and Back (1973) have indicated that married couples might have lived in an extended family in certain stages of the life cycle and that this should be properly considered in any analysis.

CHAPTER II

DATA, CONCEPTUAL FRAMEWORK AND METHODOLOGY

The unit of analysis for this study is the currently married couple in which the wife's age is between 15 and 45 years. The analysis data file consists of the individual and the household level characteristics. In particular, the husband's and wife's information are matched and merged with the household information to form a new data file for this study. A brief description of selected variables is provided in later sections for each major ethnic groups found in the study area. The three ethnic groups are the Malay, Chinese and Indians which constitute about 35%, 52% and 13% of the married couples respectively.

A. Demographic Characteristics

Certain demographic characteristics are chosen for the analyses in the next few chapters and they are shown in Table II.1. In the study area, about 20% of the wives are less than 26 years, about 48% are between 26 and 35 years and about 32% are more than 35 years. The proportion of young wives for each ethnic groups is smallest for the Chinese and is largest for the Malay. On the other hand, the Chinese have the largest proportion of older aged wives than the non-Chinese. This pattern of ethnic differential in the wife's age is also shown in the age distribution of the husband.

The above ethnic differential in the age distribution may be accounted for by ethnic differences in family formation and in migration. Indeed, if we examine the age at first marriage, only about 28% of the Chinese wives entered marriage before the age of 21 whereas for non-Chinese, the proportion is almost twice as large. The converse is true if we observe the ethnic proportion of wives who married at age 23 and above.

TABLE II.1.

Distribution of Selected Demographic Variables by Ethnicity, Kuala Lumpur (1979)

	Malay	Chinese	Indian	Total
	(4,141) %	(6,267) %	(1,607) %	(12,015) %
Wife's Age				
15-25	26.6	15.8	20.8	20.2
26-35	48.4	47.7	47.7	47.9
36-45	25.0	36.5	31.5	31.9
Age at First Marriage				
⩽ 20	54.6	28.1	53.6	40.6
21-23	25.8	30.8	25.0	28.4
⩾ 23	19.6	41.0	21.4	31.1
Children Ever Born				
⩽ 1	30.9	26.5	26.9	28.1
2-3	37.9	44.2	37.8	41.2
⩾ 4	31.2	29.3	35.3	30.7
Expected Number[a] of Children				
0-2	26.3	35.8	34.5	32.4
3-4	44.4	45.5	41.5	44.5
⩾ 5	29.3	18.7	24.0	23.1
Duration of Marriage				
⩽ 6	37.6	34.2	30.3	34.9
7-12	25.2	28.4	25.1	26.8
⩾13	37.2	37.4	44.6	38.3
Husband's Age				
⩽ 29	29.2	18.2	18.9	22.1
30-39	41.6	46.5	38.4	43.8
⩾ 40	29.2	35.3	42.7	34.1
Migrant Status (Husband)				
Local Born	10.3	44.9	33.2	31.2
Old migrant[b]	50.4	39.5	47.9	44.4
New migrant[c]	39.3	15.6	18.9	24.4

Source: Socioeconomic Survey, DBKL-PPD (1979)

a The expected number of children refers to the number expected when the wife reaches age 45.

b,c An 'old' migrant refers to one who has stayed in the study area for more than 10 years. For those who have stayed for less than 10 years, they are classified as 'new'

About 45% of the Chinese husbands are local born and only about 16% are recent migrants (that is, less than 10 years in the study area). In sharp contrast, only 10% of Malay husbands are local born and about 40% are recent migrants. The percentages for Indians are closer to the Chinese than the Malays.

There are sharp ethnic differences in the fertility measures - the cumulative fertility as measured by the children ever born and the expected number of children when the wife reaches 45 years old. Only about 19% of the Chinese couples expect to have more than 4 children and about 36% expected to have not more than 2 children. The comparative figures for the Malays are 29% and 26% respectively. The figures for the Indians are intermediate between the other ethnic groups. However, the cumulative fertility figures indicate that a larger proportion of Indian couples has more than 4 children than non-Indian couples.

B. Socioeconomic Characteristics

In this section we examine some selected indicators of socioeconomic status of the married couples. The indicators are the level of schooling achieved by the wife and husband, their medium of schooling, the husband's occupation and their family income (see Table II.2.).

If we considered (M) $400 as the poverty line for a Malaysian family, then among the families of our selected married couples, about 1/4 of them are below the poverty line. About 14% of the Chinese families are poor, but for the non-Chinese families it is more than 36%. On the other hand, 39% of Chinese families have high income (that is, more than $800) as compared with 29% for the non-Chinese.

About 8% of Malay wives have no formal schooling but more than 14% of non-Malay wives belong to this category. Furthermore, whereas only about 38% of Chinese wives have secondary schooling, the comparable figures for non-Chinese are more than 46%. These ethnic differentials are rather unexpected in view of the fact that the Chinese are more urbanized and have lived in the study area for a longer period than other ethnic groups.

The medium of the schooling may be considered a qualitative aspect of education in Malaysian society. English schooling has in the past and perhaps even now provided greater access to better occupations in the Malaysian labour market than vernacular schooling. One in four of non-Indian wives are English educated but the comparable figure for Indians is about 50%. In general, comparisons between the three ethnic groups on the husband's level and medium of schooling are similar to those of their wives.

About 30% of the Chinese husbands are in the professional, managerial and clerical occupations but more than 40% of the non-Chinese work in this category. On the other hand, a larger percentage of the Chinese (about 38%) work in the industrial and other blue collar type of occupations than the non-Chinese.

C. Family Structural Characteristics

The coresident family structure is classified in three ways. First, the number of married couples and their immediate families is used as a criterion. Based on this criterion, a household is classified as either a single family or a multiple family household. Second, the kin relationships among the family members are used as the criterion. From this criterion, a coresident family is classified as nuclear, stem or joint. A stem family is one in which only one married child and/or parents stay in the same household with the married couple. A joint family is one in which collateral and/or other distant relatives are also staying with the married couple.

TABLE II.2.

Distribution of Selected Socioeconomic Variables by Ethnicity, Kuala Lumpur (1979)

	Malay (4,141)	Chinese (6,267)	Indian (1,607)	Total (12,015)
Family Income	%	%	%	%
Low (≤ $400)	36.3	13.9	36.6	25.3
Middle ($400-$799)	35.4	46.8	35.2	41.0
High (≥ $800)	28.3	39.3	28.2	33.7
Wife's schooling				
No schooling	8.2	14.8	14.3	12.5
Primary	45.4	47.4	36.4	45.2
Secondary[a]	46.4	37.8	49.3	42.3
Wife's medium of schooling				
English	25.9	26.9	48.4	29.5
Vernacular	74.1	73.1	51.6	70.5
Husband's Schooling				
No schooling	2.4	6.2	6.1	4.9
Primary	39.8	42.8	29.9	40.0
Secondary[b]	57.8	51.0	63.9	55.1
Husband's medium of schooling				
English	39.3	35.9	65.8	41.1
Vernacular	60.7	64.1	34.2	58.9
Husband's Occupation				
White collar(upper)[c]	41.7	31.3	45.5	36.7
White collar(lower)[d]	30.1	30.4	22.2	29.2
Others	28.3	38.3	32.4	34.0

Source: Socioeconomic Survey, DBKL-PPD (1979)

a,b The 'secondary' level of schooling refers to at least seven continuous years of schooling

c This category refers to professionals, managers and clerical workers who are not associated with sales or service occupation.

d This category refers to sales or service workers.

Finally, a third basis of classification is to measure the number of generations or degree of vertical extension of the family or the married couple. A couple with unmarried children will be counted as two generations and if their parents are also with them, then it will be three generations.

The distributions of these three family structural characteristics are shown in Table II.3. The table clearly indicates that for all three measures of family structure, the Chinese families are more 'complex' than the non-Chinese, especially the Malay. The proportion of multiple families is about 33% for Chinese and this is twice as large as that of the Malay. A sharper ethnic contrast is observed for the generation length in which 39% of Chinese are multigenerational (that is, 3 or more generations) whereas only about 16% of Malay families belong to this category.

The relationship of the wife to the household head provides further indication of the ethnic differential on family structure. About 5% of the Malay wives are not the spouse of the household head, but the figure for the Chinese is about three times as large and is about twice as large for Indians. The implication is that there is a considerably larger proportion of non-Malay wives who are living in a subordinate position in a coresident family structure.

In conclusion, there are distinctive ethnic differentials in many of the demographic, socioeconomic and family structural characteristics among the married couples in the study area. These differentials are gross comparisons but the magnitude and the direction of the differences are generally expected among students of Malaysian society. We will, however, investigate the determination of the fertility measures and the family types in a multi-variate analytic framework in subsequent chapters.

TABLE II.3.

Distribution of Coresident Family Classifications
By Ethnicity, Kuala Lumpur (1979)

Family Type	Malay (4,141) %	Chinese (6,267) %	Indian (1,607) %	Total (12,015) %
Multiplicity of Family				
Single Family	84.0	66.8	74.0	73.7
Multiple Family	16.0	33.2	26.0	26.3
Nuclearity				
Nuclear	61.2	47.0	53.6	52.8
Stem	10.9	22.7	19.5	18.2
Joint	27.9	30.3	26.9	29.0
Generation Length				
Low (≤ 2)	83.7	60.9	70.3	70.0
High (≥ 2)	16.3	39.1	29.7	30.0
Relationship to Household's Head				
Head	94.8	84.2	89.5	85.0
Others	5.2	15.8	10.5	15.0

Source: Socioeconomic Survey, DBKL-PPD (1979)

Conceptual Framework

The causal model which is described here incorporates some of the theoretical insights and empirical results mentioned in the introductory chapter. In addition, the conceptual framework based on the Davis-Blake classification of the intermediate 'variables' and its extension by Freedman (Davis and Blake, 1956; Freedman, 1975) are also used as guiding principles.

The model in Figure 2.1 incorporates the assumption that the fertility measure (that is, children ever born or the expected number of children) is jointly dependent with the family structural type (that is, nuclearity or generation length or multiplicity of family). The age at first marriage of the wife is considered an important endogenous variable intervening between the demographic and socioeconomic characteristics of the couple and the joint dependent variables.

A recent study has found that post-primary schooling and work experience have strong significant effects on age at marriage for Malaysian women for all three ethnic groups (Elm and Hirschman, 1979). In this study, the effects of schooling on marital postponement are largely independent of social background and work experience. In our study, we will investigate the effects of the level and the medium of schooling on age at marriage for the three ethnic groups.

Another study has related the age of marriage to cumulative fertility of Malaysian families (Tan, 1981). In this study, age of first marriage is negatively associated with cumulative fertility among the Malaysian women in metropolitan areas but is not significant among rural women. We shall explore this relationship within each ethnic group in this study.

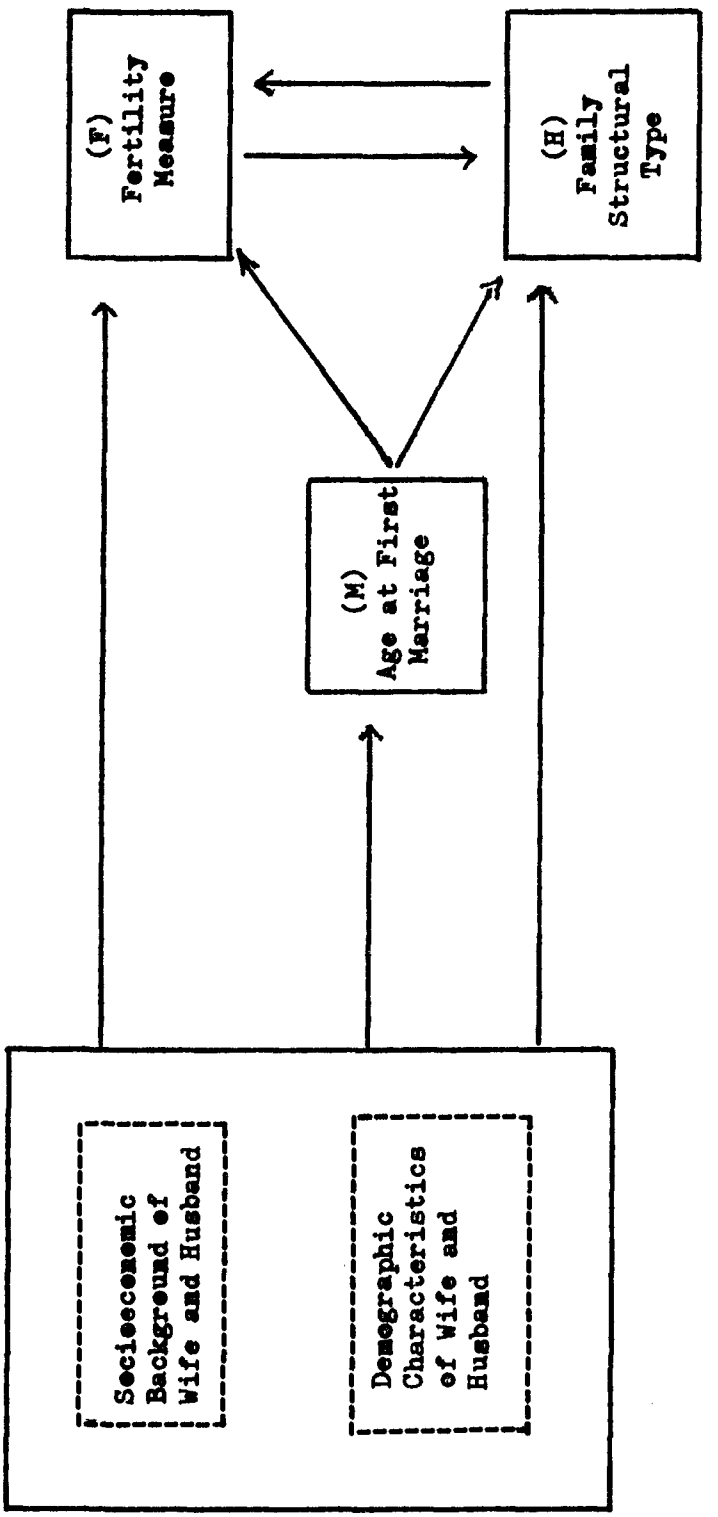

Figure 2.1.: A Causal Model of the Joint Determination of Fertility and Family Structure

At the theoretical level, Burch and Gendell have pointed out that although age at marriage has been considered a most important intervening variable in the relationship between family type and fertility, very little empirical work which incorporates the variables in the analysis had been done. In fact, Davis and Blake have attributed almost all the effects of family structure on fertility to its influence on age at marriage. Back and Hass have suggested that in such a study, a more dynamic view of family structure should be undertaken in which the possibility that causation may run from fertility to family structure as well as from family structure to fertility.

Methodology

In the empirical analysis of the causal model described earlier, we shall undertake to estimate the net effects of the independent variables on the endogenous and dependent variables in two stages. In the first stage, the determination of age at first marriage will be examined.

In the second stage, the determination of the fertility variables and the family structure will be undertaken. However, we will not estimate the effects of the independent variables using a jointly determined set of simultaneous equations (Hanusbek and Jackson, 1977). On the other hand, the estimate of the effects for fertility and family structure will be estimated separately in a reduced form. This strategy of analysis will entail a bias in the estimates but this loss is likely to be tolerable. The main reason behind this analytic strategy is that this is a preliminary investigation of the research problem and we are more interested in examining some of the basic results and to provide explanations for them, than in having more refined estimates of the net effects.

One consequence of the above analytic strategy is that we shall use the Multiple Classification Analysis (MCA) to determine

the interrelationships between the dependent and the independent variables. MCA is a variant of a multiple regression technique using dummy variables. One of its main advantages over the dummy variable regression technique is a more convenient and elegant output which has coefficients that are easily interpretable. Another advantage is that MCA can handle a different measurement of the predictor variables and provide a useful summary measure of relationship.

The MCA, like regression analysis, cannot be utilized directly in interactive models. In view of the fact that ethnicity is an important factor in Malaysian society and has been demonstrated to be interactively associated with fertility (Tan, 1981), the MCA will be used within each ethnic group in this study.

CHAPTER III

AGE AT MARRIAGE AND FERTILITY

There are two types of analysis in this chapter which follow the causal scheme described in Chapter II. First, the interrelationships between the level of schooling, medium of schooling, and age with the age at first marriage are investigated. These are examined in a multivariate analytic framework between and within ethnic groups. Second, the determination of two measures of fertility - the children ever born and the expected number of children, is undertaken so as to assess the direct and indirect effects of family structure and other predictors on fertility.

Age at Marriage

In this section, the gross and net associations between several predictors and age at first marriage among the sample of currently married couples are described. Table III.1 presents the bivariate relationships for each ethnic group, in which the percentages of women who had married before reaching 21 years old are calculated. The percentages for the three ethnic groups, the Malay, Chinese and Indians, are about 55, 28 and 54 respectively.

In this table, the level and the medium of schooling have strong gross associations with the age at marriage for all three ethnic groups. The percentages for women with secondary schooling are about half of those with no schooling for all ethnic groups. A similar comparison is also found between the English educated and vernacular educated women. Among the age cohorts, there is a noticeable decline in the percent of young age at marriage for non-Chinese women. For age cohorts between 36-45 years, more than 60 percent of the non-Chinese women was married before age 21 but

TABLE III.1.

Percent of Women who Married before Age 21 by Wife's Schooling, Medium of Schooling and Age for each Ethnic Group[a]

	Malay (%)	Chinese (%)	Indian (%)
Wife's Schooling			
None	73.1	38.0	79.9
Primary	69.4	33.2	68.9
Secondary	37.5	17.9	36.3
Medium of Schooling			
Vernacular	62.8	31.5	70.7
English	31.8	18.8	36.7
Wife's Age			
≤ 25	64.1	47.8	64.3
26-35	44.4	22.8	44.6
36-45	64.6	26.8	60.7

Source: Socioeconomic Survey, DBKL-PPD (1979)

[a] The percentages for the three ethnic groups, Malay, Chinese and Indians are 54.6%, 28.1% and 53.6% respectively.

for age cohorts between 26-35 years, the figures are about 44 percent. On the other hand, the figures for the Chinese women in the above age cohorts show only a slight decline.

Nevertheless, for all levels of schooling, medium of schooling and age cohorts, the percent of Chinese women who married before age 21 is considerably smaller than that of the non-Chinese women. The Malay and the Indian women are quite similar in this aspect of the marriage pattern.

In order to assess the relationship between the predictors and the age at marriage in a less ambiguous manner, a multivariate analysis - the Multiple Classification Analysis (MCA) is employed so that the net effect of each of the predictors can be ascertained with statistical control over the other predictors. The gross and net effects of these predictors are expressed as deviations from the grand 'mean'. In this analysis, the grand 'mean' is the grand proportion of women married before reaching age 21. The results of this analysis using an additive model are shown in Table III.2.

A. The Additive Model

The net effect of ethnicity on age at marriage remains about the same magnitude as the gross effect, which indicates that the direct effect of ethnicity is significantly strong. Furthermore, the pattern of age at marriage for the Malay and the Indian women appears to be sharply different from that of the Chinese women.

There is also a strong direct effect of the level of schooling on age at marriage in which women with more schooling tend to postpone their marriages. This effect, however, is not as strong as the ethnicity effect. English educated women are more likely to marry later than vernacular educated women. English schooling is more likely to be correlated with longer duration of schooling and this may be the reason for the considerable reduction in the gross

TABLE III.2.

Summary Statistics of the MCA of Wife's Age of Marriage[a] adjusted for Ethnicity, Schooling, Medium of Schooling, Age and Migrant Status

Predictors	N	Unadjusted[b] Devn.	Adjusted[c] Devn.
Grand Mean		0.40%	
Ethnicity		(0.27)[d]	(0.30)[e]
Malay	3744	0.14	0.15
Chinese	5805	-0.12	-0.14
Indian	1435	0.13	0.16
Schooling		(0.22)	(0.21)
None	1337	0.11	0.13
Primary	4937	0.09	0.08
Secondary	4710	-0.12	-0.12
Schooling Medium		(0.18)	(0.06)
Vernacular	7704	0.06	0.02
English	3208	-0.14	-0.05
Age		(0.19)	(0.19)
15-25	2227	0.17	0.19
26-35	5310	-0.07	-0.06
36-45	3447	0.00	-0.03
Migrant Status		(0.03)	(0.10)
Local[f]	3675	-0.02	-0.07
Migrant	7309	0.01	0.04
R^2		0.18	

[f] The 'local' includes those who have migrated to the study area for more than 10 years.

[d,e] These numbers are the eta (or correlation ratio) coefficients and partial beta coefficients respectively.

[b,c] The unadjusted and adjusted means of each category are expressed as deviations from the grand mean. The adjusted means are estimates of what the mean would have if the group had been exactly like the total population in its distribution over all the other predictor classification.

[a] The dependent variable is a dummy variable with age of marriage at less than 21 years coded as "1", otherwise it is coded as "0".

effect of the medium of schooling when other predictors (especially the level of schooling) are statistically controlled.

The age and the migrant status variables are used as 'controlled' variables in this analysis. Nevertheless, it is interesting to note that migrant women are less likely to marry early than local women. This result may be due to the selectivity feature of migration in which migrant women are less likely to be better educated and employed than local women.

B. The Interactive Model

So far, we have examined the additive model but there are significant interactions between ethnicity and the schooling variables. In order to show the net effects of these schooling variables unambiguously, an analysis is run separately for each ethnic group, and the results are shown in Table III.3.

The effects of the level of schooling for Malay and Indian women are considerably reduced when other variables are statistically controlled but this is not so for the Chinese women. Nevertheless, the net effect of the level of schooling for non-Chinese is still larger than that of the Chinese. On the other hand, the net effects of the medium of schooling for all ethnic groups are considerably smaller that those of the gross effects. In fact, the net effect for the Chinese is not significant, which implies that English schooling has no independent influence on the age at marriage for Chinese women. Among the non-Chinese women, the English educated are more likely to postpone their marriages than their vernacular educated counterparts.

As a summary, we see that ethnicity and the level of schooling have strong and direct influence on the age at marriage. These results are somewhat anticipated and are consistent with other findings in Malaysia. Women with longer duration in school

TABLE III.3.

Summary Statistics[a] of the MCA of Wife's Age at Marriage by Ethnicity, Adjusted for Schooling, Medium of Schooling, Age and Migrant Status.

Predictors	Malay		Chinese		Indian	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Grand Mean	0.55%		0.28%		0.54%	
Schooling	(0.33)	(0.26)	(0.18)	(0.18)	(0.37)	(0.24)
None	0.18	0.13	0.10	0.11	0.26	0.18
Primary	0.15	0.12	0.05	0.04	0.15	0.10
Secondary	-0.17	-0.14	-0.10	-0.10	-0.17	-0.12
Schooling Medium	(0.27)	(0.12)	(0.13)	(0.02)	(0.34)	(0.14)
Vernacular	0.08	0.04	0.04	0.00	0.17	0.07
English	-0.23	-0.10	-0.10	-0.01	-0.17	-0.07
Age	(0.20)	(0.20)	(0.19)	(0.22)	(0.18)	(0.17)
15-25	0.09	0.16	0.19	0.23	0.11	0.15
26-35	-0.10	-0.08	-0.05	-0.03	-0.09	-0.07
36-45	0.10	-0.01	-0.01	-0.05	0.07	0.02
Migrant Status	(0.12)	(0.12)	(0.08)	(0.09)	(0.10)	(0.09)
Local	-0.06	-0.06	-0.07	-0.07	-0.08	-0.07
Migrant	0.06	0.06	0.02	0.02	0.03	0.03
R^2	0.16		0.08		0.18	

[a] See footnotes in Table III.2. for meanings of statistics.

naturally would have to postpone early marriages during the schooling years. In addition, they are also more likely to obtain paid employment and an independent source of income and these factors may further postpone their marriages. The ethnic differential appears to be associated with cultural factors in which norms for early marriages are differently prescribed between the ethnic groups. Unlike the effect of the level of schooling, the medium of schooling has a direct effect on the age at marriage for non-Chinese women only. If we consider exposure to English schooling as an important socialization experience towards western values and lifestyles, then the latter result indicates that only the non-Chinese women are possibly influenced through such a process.

Children Ever Born

In this section, the gross and net effects of a set of demographic, socioeconomic and family structural variables will be assessed with respect to a cumulative fertility measure - the children ever born. The demographic factors are age of wife, age at first marriage and husband's migrant status; the socioeconomic factors are the wife's level and medium of schooling, the husband's occupation and family income. The family structural variables are the nuclearity of the coresident family and the wife's relationship to household head.

Since ethnicity is closely associated with other predictors, it is less ambiguous if a separate analysis is conducted for each ethnic group. The results of these analyses using the MCA are shown in Table III.4. Migrant status is used as a controlled variable. Husband's occupation and family income are found to be statistically not significant.

A. Wife's Age and Age at Marriage

The wife's age has an obvious association with cumulative

TABLE III.4.

Summary Statistics[a] of the MCA of Children Ever Born by Ethnicity Adjusted for Age, Age of Marriage, Schooling, Husband's Occupation and Schooling Medium, Family Income, Migrant Status and Family Type

Predictors	Malay		Chinese		Indian	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Grand Mean	3.0		3.0		3.1	
Wife's Age	(0.56)	(0.51)	(0.47)	(0.45)	(0.45)	(0.42)
15-25	-1.5	-1.6	-1.5	-1.7	-1.6	-1.7
26-35	-0.2	-0.0	-0.5	-0.3	-0.2	0.0
36-45	1.9	1.6	1.0	0.8	1.2	0.9
Age at Marriage	(0.33)	(0.30)	(0.29)	(0.30)	(0.39)	(0.31)
≤ 20	0.6	0.5	0.8	0.8	0.7	0.5
21-23	-0.5	-0.3	0.0	0.1	-0.7	-0.3
> 23	-1.1	-1.2	-0.5	-0.6	-1.2	-1.1
Wife's Schooling	(0.38)	(0.12)	(0.43)	(0.21)	(0.40)	(0.17)
No schooling	1.6	0.6	1.3	0.7	1.2	0.4
Primary	0.6	0.2	0.3	0.1	0.7	0.4
Secondary	-0.9	-0.3	-0.9	-0.4	-0.8	-0.4
Schooling Medium	(0.19)	(0.05)	(0.32)	(0.11)	(0.36)	(0.16)
Vernacular	0.3	0.1	0.4	0.2	1.1	0.5
English	-0.5	-0.1	-0.8	-0.3	-0.5	-0.2

(continued)

Table III.4. (continued)

Predictors	Malay		Chinese		Indian	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Family Type	(0.16)	(0.05)	(0.12)	(0.01)*	(0.19)	(0.05)*
Nuclear	0.3	0.1	0.2	0.0	0.3	0.1
Stem	-0.3	-0.1	-0.2	0.0	-0.2	0.1
Joint	-0.5	-0.2	-0.3	0.0	-0.6	-0.2
Relationship to Household's Head	(0.14)	(0.03)	(0.17)	(0.07)	(0.20)	(0.11)
Head/Spouse	-1.5	-0.4	-0.8	-0.3	-1.4	-0.8
Others	0.1	0.0	0.1	0.1	0.1	0.1
R^2	0.46		0.44		0.45	

* Not significant at 0.05 level.

[a] See Table III.2 for meanings of statistics

fertility because it measures the extent of exposure to risk of child-bearing. In this analysis, age is treated more as a controlled variable so as to remove as much as possible both cohort and differential exposure effects.

The age at first marriage measures the timing of entry into sexual union which directly affects the timing and tempo of child-bearing. Furthermore, age at marriage has attitudinal and behavioural consequences that affect fertility indirectly (Bumpass, 1969). Postponement of the age at marriage is an effective means of reducing the fertility level of a society. Since we have shown that ethnic differential on this variable is quite pronounced in Malaysia, this variable should be related to ethnic differences in fertility behaviour and fertility expectation.

From Table III.4, we observe that the wife's age is the strongest predictor and the age at marriage is the next strongest for all three ethnic groups. The gross and net effects of these two variables are quite similar in magnitude, this suggests that these two variables have strong and direct influences on children ever born even when other variables have been statistically controlled.

The oldest age cohorts (36-45 years) have about 3 children more than the youngest age cohorts (15-25 years) for Malay women and about 2.5 children more for non-Malay women. The effect of age on cumulative fertility is monotonic increasing and that of the effect of age at marriage on fertility is monotonic decreasing. These results conform to our expectations. Women of all ethnic groups who married at very young ages (less than 21 years) have about 1.5 children more than those who married at age later than 23 years.

B. Wife's Level and Medium of Schooling

In most of the large number of empirical studies on the relationship between the wife's level of schooling and fertility, schooling is found to have a negative effect on fertility behaviour and related attitude. Since the qualitative aspect is an important dimension of schooling and the English medium of schooling in Malaysian society is associated with better facilities and teaching staff, it is of some importance to assess its effect other than that of the level of schooling.

Table III.4 shows that the above two schooling variables have significantly large independent effects on cumulative fertility, although they are not as large as those of the age or age at marriage. The effect of the level of schooling is monotonic decreasing and women with secondary schooling are likely to have about 1 child less than those with no schooling. This result is applicable to all three ethnic groups.

English educated women tend to have fewer children than those with no schooling or with vernacular schooling. However, this effect is quite weak for Malay women and is stronger for non-Malay women, especially the Indian women. This ethnic differential may be due to a differential rate of acculturation of western values and lifestyle by the three ethnic groups. Since the Malay has stronger rural background influences and are the indigenous ethnic group, it is conceivable that English schooling has less influence on them than those of the non-Malay.

C. Family Type and Household Relationship

There is a significant gross association between the family type and the children ever born for all three ethnic groups. The nuclear family tends to have a larger number of children than the stem or joint family type. However, the net effect of family type on fertility is not statistically significant. This implies

that most of the observed association between family type and cumulative fertility is due to common correlations with other predictors.

Another aspect of the coresident family structure is the kin relationship of the wife with the household head. It is argued that a woman who is a spouse of a household head has different social status and authority than a married woman who is just another kin member of the household. The latter woman has less privacy and authority and less inclination to build up the desired family size at this juncture in her household development cycle. The results in Table III.4 show that indeed the wife of the household head tends to have slightly more children than other married women in the household. Though the net effect is not strong, it is statistically significant.

The above results on the association between cumulative fertility and family type and kin relationship with household head, are generally in accord with empirical studies obtained by Nag, Pakrasi and Malaker in Indian Villages and cities.

Expected Number of Children

Another aspect of fertility is the expected number of children a currently married woman of child-bearing age is likely to have when she reaches 45 years old. This measure of fertility is not a cumulative measure and is therefore less dependent on the extent of exposure to child-bearing than that of the children ever born. The results of the MCA on the expected fertility are shown in Table III.5.

Once again, the demographic factors of age and age at marriage are clearly the strongest predictors of expected fertility for all ethnic groups. However, the net effect of age is about the same as that of the age at marriage. Older women tend to have

TABLE III.5.

Summary Statistics[a] of the MCA of Expected Number of Children by Ethnicity Adjusted for Age, Age at Marriage, Schooling, Husband's Occupation and Schooling Medium, Family Income, Migrant Status and Family Type

Predictors	Malay		Chinese		Indian	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Grand Mean	3.8		3.3		3.5	
Wife's Age	(0.35)	(0.31)	(0.33)	(0.29)	(0.31)	(0.28)
15-25	-0.6	-0.7	-0.7	-0.9	-0.8	-0.9
26-35	-0.2	-0.1	-0.4	-0.2	-0.2	-0.1
36-45	1.1	0.9	0.6	0.5	0.8	0.6
Age at Marriage	(0.29)	(0.24)	(0.28)	(0.26)	(0.44)	(0.28)
⩽ 20	0.5	0.4	0.7	0.6	0.6	0.4
21-23	-0.4	-0.2	0.0	0.1	-0.6	-0.3
> 23	-0.8	-0.8	-0.5	-0.5	-1.1	-0.9
Wife's Schooling	(0.29)	(0.09)	(0.41)	(0.21)	(0.40)	(0.17)
No Schooling	0.9	0.3	1.1	0.7	0.9	0.2
Primary	0.4	0.1	0.3	0.1	0.7	0.4
Secondary	-0.6	-0.2	-0.8	-0.4	-0.7	-0.3
Schooling Medium	(0.19)	(0.09)	(0.31)	(0.12)	(0.35)	(0.16)
Vernacular	0.3	0.1	0.4	0.2	0.9	0.4
English	-0.5	-0.2	-0.7	-0.3	-0.5	-0.2

(continued)

Table III.5 (continued)

Predictors	Malay		Chinese		Indian	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Family Type	(0.11)	(0.03)*	(0.08)	(0.02)*	(0.14)	(0.06)
Nuclear	0.2	0.0	0.1	0.0	0.2	0.0
Stem	-0.1	0.0	0.0	0.1	0.0	0.2
Joint	-0.3	-0.1	-0.2	0.0	-0.5	-0.2
Relationship to Household's Head	(0.08)	(0.00)*	(0.10)	(0.04)	(0.12)	(0.07)
Head	-0.7	0.0	-0.4	-0.2	-0.7	0.0
Others	0.0	0.0	0.1	0.0	0.1	-0.5
R^2	0.23		0.31		0.34	

* Not significant at 0.05 level.

[a] See Table III.2 for meanings of summary statistics.

higher expected fertility than younger women and this may reflect partly the differential preferences of the age cohorts as well as the positive correlation between cumulative fertility and expected fertility. The older age cohorts (36-45 years) expect to have about 1.5 children more than the youngest age cohorts (15-25 years) for all ethnic groups. However, Malay women have the highest expected fertility, (3.8 children), followed by the Indian women (3.5 children), and the Chinese women have the lowest expected fertility (3.3 children).

Women who married at a very young age (less than 21 years) tend to expect about 1 children more than those who married at the older age group (more than 23 years). Both the net effects of age and age at marriage for expected fertility are consistent with those of the cumulative fertility.

The schooling variables, the level and the medium of schooling, constitute the next set of important predictors of expected fertility. Their net effects on expected fertility are almost the same as those of the cumulative fertility. The English educated and the better educated women expect to have fewer children than the other categories of women.

The net effects of the family structural variables on expected fertility are weaker than the above demographic and schooling variables. In fact, only the Indian women show significant association between family type and expected family.

Summary

The determination of age at marriage and of fertility from our analyses indicates two important results. First, ethnicity, the wife's level and medium of schooling have strong and direct influences on age at marriage and on fertility. The

schooling variables have direct influences on fertility and indirect influences via age at marriage. Second, the family structural variables have very weak direct influences on fertility.

CHAPTER IV

DETERMINATION OF CORESIDENT FAMILY STRUCTURE

In the previous chapter, we have observed that in the determination of the cumulative and expected fertility, the relationship between family structure and fertility is insignificant. In the context of the causal scheme posited in Chapter II, it is necessary to examine the possible causal effect of cumulative fertility on family structure. In this chapter, three aspects of the coresident family structure - multiplicity of family, generation length and nuclearity, are examined in the context of a multivariate analysis. We are particularly interested in the interrelationship between cumulative fertility and family structure although other interrelationships are also examined and discussed. The full additive model will be examined initially. Then, because there are interaction effects between ethnicity and other predictors, separate additive models within ethnic groups will also be examined for further elaboration.

Ethnicity

Ethnicity is strongly associated with family structure. Chinese couples tend to live in multiple family households or in a household with more than two generational kin members or in a non-nuclear family household to a greater extent than non-Chinese couples. In other words, there is a greater propensity for Chinese couples to live in complex coresident family structures than other couples. On the other hand, Malay couples have the highest propensity to live in single coresident family structure and the Indian couples are intermediate between the other two ethnic groups. The net ethnicity effect on family structure is one of the strongest among all the predictors (see Table IV.1). This indicates that the living arrangement in Malaysia is to a large extent determined by cultural factors.

TABLE IV.1.

Summary Statistics of the MCA of Indices of Coresident Family Structure adjusted for Husband's Age, Husband's Medium of Schooling[a], Migrant Status, Family Income, Duration of Marriage[b], Children Ever Born and Ethnicity

Predictors	Multiple Family		Generation Length		Nuclearity	
	Unadj.[c] Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
	(%)		(%)		(%)	
Grand Mean	(0.14)[e]	(0.11)[f]	(0.06)	(0.08)	(0.15)	(0.11)
< 30	-9	-8	3	-5	-12	-9
30-39	-1	0	-1	-1	- 2	-1
⩾ 40	6	4	3	4	9	6
Family Income	(0.09)	(0.12)	(0.05)	(0.07)	(0.02)	(0.01)
$400	-5	-7	-2	-4	1	1
$400-$799	0	1	-1	0	0	0
$800	4	4	3	3	0	0
Children Ever Born	(0.13)	(0.07)	(0.03)	(0.03)*	(0.15)	(0.08)
< 2	-8	-5	0	2	-12	-7
3-4	1	2	-1	0	1	1
⩾ 5	4	1	2	-1	8	3
Migrant Status	(0.18)	(0.14)	(0.20)	(0.16)	(0.11)	(0.10)
Local	-10	-7	-12	-9	- 8	-7
Old migrant	4	1	3	1	4	1
New migrant	6	7	10	9	2	6

(continued)

Table IV.1. (continued)

Predictors	Multiple Family		Generation Length		Nuclearity	
	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
Ethnicity	(0.19)	(0.18)	(0.19)	(0.16)	(0.08)	(0.06)
Malay	8	8	10	8	5	4
Chinese	-6	-7	- 7	-6	-4	-3
Indian	-1	1	- 2	-1	0	-1
R^2	0.10		0.07		0.05	

a,b The adjusted and unadjusted means for these two variables are not shown in this Table. The medium of schooling is significant and the duration of marriage is not significant for all the above analyses.

c,d The unadjusted and adjusted deviation are the estimated values taken from the grand mean and expressed as percentages.

e,f These are the correlation ratio and beta measures of association respectively.

see footnotes in Table III.2. for explanation

The effect of ethnicity, however, is not linear additive with respect to other predictors. Consequently, an interactive model is required to explicate more fully the interrelationships between ethnicity and other predictors with family structure. In order to avoid unnecessary analysis and without major loss in generality, a further analysis of family nuclearity (and not generation length or multiple family) is undertaken for each ethnic group (see Table IV.2).

Husband's Age and Migrant Status

The husband's age is assumed to reflect cohort and possibly family life cycle differences. It is noted in Chapter II that Malaysian families are still quite tradition orientated in the sense that a sizeable percent of them have a complex family structure. It is conceivable that a typical household development cycle for a married couple is to live in a complex household at the initial stage of married life partly because of traditional practice as well as financial considerations. At later stages of the family life cycle, the married couple with their own children will tend to live in nucleated or simple family structures.

The results in Table IV.1 show that for all the three indices of family structure, husband's age is positively associated with a simple family structure. The older the husband, the more likely would the married couple stay in a nuclear or non-multigenerational or single family household. The effect of age is significantly strong and this confirms that the household development cycle is a likely explanation.

The migrant status of the husband is conceived of as a controlled variable in this analysis. The availability of kin is necessary before a family can be classified as having a coresident complex family structure. In this regard, a local husband versus a recent migrant husband is more likely to have available kin and,

therefore, is more likely to have a complex family structure. Indeed, the results in Table IV.1 indicate that this is the situation and is strongly significant, especially for non-Malay couples.

Husband's Schooling and Family Income

It is postulated that the husband's level and medium of schooling would have significant effects on family structure. An English schooling is an important means towards socialization to western values and lifestyles and in particular to western conjugal family systems. The results, however, indicate that these variables are not significant, which imply that they have no independent affects on living arrangements.

The results in Table IV.1 indicate that a couple with a higher income is less likely to live in a multi-family household or a multi-generational household. Furthermore, there is no relationship between nuclearity and income. However, there is a significant ethnicity-income interaction and this is illustrated clearly in Table IV.2 with respect to nuclearity.

The income-nuclearity relationships are significant for all three ethnic groups but the form of the relationship is different for Malay and non-Malay couples. A Malay couple is more likely to live in a non-nuclear family if they have more income. However, for non-Malay couples, it is the reverse pattern since income is positively associated with nuclearity.

This interaction effect may be due to the following considerations. Economic resources are required to maintain and to perpetuate a complex family household. For the Indians and Chinese, there are strong and well-defined traditions which encourage extended family living arrangements. This is not so for the Malays. Consequently, for poor non-Malay couples, a complex

family household is a legitimate form and furthermore the severe burden of poverty can be somewhat ameliorated. On the other hand, such legitimation is lacking for Malay couples and therefore the income-family structure relationship is likely to be different between the ethnic groups.

Another reason for the above ethnic interaction pattern may be due to the fact that a higher income enables a non-Malay couple to 'purchase' privacy in a nuclear family or in a single family structure setting. On the other hand, a higher income enables a Malay couple to form extended family living arrangements in the study area. This assumption of ethnic differential response to income may be due to differential exposure to urbanized living experiences in metropolitan areas in Malaysia.

Children Ever Born

In this last section of this chapter, we shall examine the relationship between cumulative fertility and family structure. From Table IV.1, it is observed that children ever born is associated with nuclearity and multiplicity of family but there is no significant association with generation length. In general, a couple with more children is more likely to live in a simple family structure than one with fewer children. This may suggest that the family life cycle is associated with the living arrangements and this is consistent with the results obtained for husband's age.

The fertility-family structure relationship is significant for all three ethnic groups as shown in Table VI.2. The relationship appears to be stronger for Malay couples than for non-Malays.

Summary

The amount of variance explained by the above analysis in the determination of coresident family structure is less than 10

TABLE IV.2.

Summary Statistics of the MCA of Family Nuclearity[a] by Ethnicity adjusted for Husband's Age, Family Income, Duration of Marriage, Migrant Status and Husband's Schooling Medium[b]

Predictors	Malay		Chinese		Indian	
	Unadj.[c] Devn.	Adj.[d] Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
	(%)		(%)		(%)	
Grand Mean	64		55		58	
Husband's Age	(0.12)[e]	(0.08)[f]	(0.19)	(0.12)	(0.22)	(0.15)
< 29	-8	-6	-19	-11	-22	-16
30-39	0	1	- 2	- 2	- 2	0
⩾40	7	4	10	6	10	5
Family Income	(0.14)	(0.14)	(0.13)	(0.10)	(0.07)	(0.06)
< $400	8	8	-16	-12	- 3	- 2
$400-$799	-1	-2	- 1	1	- 1	- 2
⩾ $800	-9	-8	4	3	5	4
Marriage Duration	(0.12)	(0.02)	(0.17)	(0.08)	(0.20)	(0.06)
1-6	-7	-1	-12	- 5	-14	- 4
7-12	1	0	2	0	0	- 1
⩾13	6	1	8	4	9	3
Migrant Status	(0.04)	(0.06)	(0.10)	(0.09)	(0.13)	(0.12)
Local	-5	-5	- 6	- 5	- 9	- 7
Old migrant	1	-2	6	3	5	1
New migrant	0	0	1	6	3	10

(continued)

TABLE IV.2. (continued)

Predictors	Malay		Chinese		Indian	
	Unadj.[c] Devn.	Adj.[d] Devn.	Unadj. Devn.	Adj. Devn.	Unadj. Devn.	Adj. Devn.
	(%)		(%)		(%)	
Children Ever Born	(0.16)	(0.10)	(0.15)	(0.07)	(0.18)	(0.08)
≤ 2	-10	-7	-13	-6	-15	-7
3-4	0	0	2	2	1	1
≥5	9	6	7	1	8	3
R^2	0.05		0.07		0.08	

[a] 'Family Nuclearity' is a dichotomous variable in which 'nuclear' is coded as 1.

[b] The effect of Medium of Schooling is significant at 0.001 level.

[c,d,e,f] See Footnotes of Table IV.1.

percent and evidently has considerable room for incorporating other pertinent variables. Our objective here, however, is merely to demonstrate some empirical relationships between fertility and related variables with family structure and not to provide a comprehensive account for the determination of family structure. It is interesting to note that although family structure has no direct effect on cumulative fertility (see Chapter III), there is a direct effect of fertility on family structure. The interaction effects of ethnicity with income and other predictors clearly indicate that as far as living arrangement is concerned, ethnic differentials need to be explained in a proper analytic framework, otherwise, the direct effect of ethnicity tends to be confounded and misinterpreted.

CHAPTER V

SUMMARY AND CONCLUSIONS

Summary

This is an exploratory study of the empirical relationship between family structure, and fertility. Although the theoretical basis for this relationship has long been established in the demographic literature, very few empirical investigations have been undertaken, especially in Malaysia.

The findings in this report have shown that ethnicity, the level and medium of schooling and the age at marriage are very important determinants of the cumulative as well as the expected fertility. The age at marriage is an important 'intermediate' variable in our causal scheme for our analysis. However, the ethnicity and the schooling variables have direct influences on fertility in addition to the indirect influences via the age at marriage. There is no direct influence from any of the family structure indices to fertility. This negative result is consistent with some of the findings in India. Nevertheless, whether a married woman is the spouse of the household's head or just another kin member is a significant factor influencing fertility. These latter results indicate that it is not mere participation in certain types of family structure that has bearings on fertility but more important is the role position of the wives in the household. A subordinate role position in a complex family household is likely to lead to lower fertility, perhaps, because of deliberate postponement to a later stage in the household development cycle in which the husband has adequate economic resources to set up an independent household. Another factor is the lack of privacy and hence to less frequent sexual intimacy for wives in such a subordinate position.

In this study, we have also investigated the determinants of family structure. We found that ethnicity, income, age and migrant status have significant influences on family structure and that ethnicity has strong interaction affects with other predictors, especially with income. Whereas non-Malay couples appear to utilize economic resources to 'purchase' privacy' and hence to set up independent households, the Malay couples appear to do the opposite. Possible explanations for the latter are the well defined and established non-Malay norms on extended family living arrangements and the fact that the non-Malays who are not indigenous communities have longer exposure to urban living in Malaysia.

Cumulative fertility has a significant influence on family structure. A couple with more children is more likely to live in a nuclear family. This may indicate an aspect of the household development cycle in which newly married couples stay in an extended family structure for a brief period and form their own households when they have a few children and perhaps adequate income, too.

Conclusions

We have discussed the causal scheme which guides our analyses in this study but the effects of the variables are obtained from single equation estimations and not from multi-equation estimations. The latter estimates are free from certain bias in statistical estimation, but the interpretations are not as easy and as convenient as the Multiple Classification Analysis estimates which are being used in this study. Given the weak relationships being found between fertility and family structure in both causal directions, there are some merits in choosing a better statistical estimation procedure. In this regard, further empirical investigations need to be done with respect to the posited causal scheme.

The above methodological issue is quite important but what is more important is to improve the conceptual scheme of the relationship between family structure and fertility. Our findings do not clarify whether family size ideals and related social norms influence fertility or whether actual participation in certain family structural types leads to differential fertility. The significant effect of the role position of wives in extended family households suggests that certain family interaction and their effects need to be investigated in greater details.

In a recent study, (Chee, 1981) the relationship between poverty and coresident family structure was investigated using similar data set. It is found that ethnic difference in coresident family structure have strong implications for proper measurement of inter-ethnic level of poverty and that poverty per se has a direct affect on family structure. It is, therefore, of some theoretical importance and also of relevance to current Malaysian socioeconomic policy, to examine the interrelationships between poverty, family structure and fertility. Hopefully, this study will form an initial step in this direction of sociodemographic research.

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SEAPRAP

THE SOUTHEAST ASIA POPULATION RESEARCH AWARDS PROGRAM

PROGRAM OBJECTIVES

* To strengthen the research capabilities of young Southeast Asian social scientists, and to provide them with technical support and guidance if required.

* To increase the quantity and quality of social science research on population problems in Southeast Asia.

* To facilitate the flow of information about population research developed in the program as well as its implications for policy and planning among researchers in the region, and between researchers, government planners and policy makers.

ILLUSTRATIVE RESEARCH AREAS

The range of the research areas include a wide variety of research problems relating to population, but excludes reproductive biology. The following are some examples of research areas that could fall within the general focus of the Program:

* Factors contributing to or related to fertility regulation and family planning programs; familial, psychological, social, political and economic effects of family planning and contraception.

* Antecedents, processes, and consequences (demographic, cultural, social, psychological, political, economic) of population structure, distribution, growth and change.

* Family structure, sexual behaviour and the relationship between child-bearing patterns and child development.

* Inter-relations between population variables and the process of social and economic development (housing, education, health, quality of the environment, etc).

* Population policy, including the interaction of population variables and economic policies, policy implications of population distribution and movement with reference to both urban and rural settings, and the interaction of population variables and law.

* Evaluation of on-going population education programs and/or development of knowledge-based population education program.

* Incentive schemes — infrastructures, opportunities; overall economic and social development programs.

SELECTION CRITERIA

Selection will be made by a Program Committee of distinguished Southeast Asian scholars in the social sciences and population. The following factors will be considered in evaluating research proposals:

1. relevance of the proposed research to current issues of population in the particular countries of Southeast Asia;
2. its potential contribution to policy formation, program implementation, and problem solving;
3. adequacy of research design, including problem definition, method of procedure, proposed mode of analysis, and knowledge of literature;
4. feasibility of the project, including time requirement; budget; and availability, accessibility, and reliability of data;
5. Applicant's potential for further development.

DURATION AND AMOUNT OF AWARDS

Research awards will be made for a period of up to one year. In exceptional cases, requests for limited extension may be considered. The amount of an award will depend on location, type and size of the project, but the maximum should not exceed US$7,500.

QUALIFICATIONS OF APPLICANTS

The Program is open to nationals of the following countries: Burma, Indonesia, Kampuchea, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam. Particular emphasis will be placed on attracting young social scientists in provincial areas.

Applications are invited from the following:

* Graduate students in thesis programs

* Faculty members

* Staff members in appropriate governmental and other organizations.

Full-time commitment is preferable but applicants must at least be able to devote a substantial part of their time to the research project. Advisers may be provided, depending on the needs of applicants.